Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems	)	ET Docket No. 98-153
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	)	
	)	

To: The Cable Services Bureau

COMMENTS OF THE NATIONAL ASSOCIATION OF BROADCASTERS

The National Association of Broadcasters ("NAB")[1] hereby files brief comments in response to the *Notice of Proposed Rule Making* ("*Notice*") in the above-captioned proceeding.[2] Two years ago, the Commission, on its own motion, initiated an inquiry to assess the appropriateness of permitting the operation of ultra-wideband (UWB) radio systems on an unlicensed basis under Part 15 of its rules.[3] While NAB applauds the Commission's efforts to promote new technology, the operation of UWB radio systems on a Part 15, unlicensed basis has the potential to create harmful interference to the authorized broadcast radio and television services. NAB agrees with the Commission that it "should develop reasonable regulations that will foster the development of UWB

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[1] NAB is a nonprofit incorporated association of radio and television stations and broadcast networks. NAB serves and represents the American broadcasting industry.

[2] Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, *Notice of Proposed Rule Making*, ET Docket No. 98-153, rel. May 11, 2000.

[3] Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems, *Notice of Inquiry*, ET Docket No. 98-153, rel. September 21, 1998 [hereinafter *NOI*].

technology" so long as it "continu[es] to protect radio services against interference." *Notice* at ¶ 8.

Such protection, however, can only be accomplished if the Commission exhaustively studies the impact of various types of UWB communications systems and establishes clear and well defined sharing criteria that will ensure the compatibility of UWB technology with incumbent radio services. To date, there are no relevant technical studies upon which the Commission could rely in order to craft an appropriate Part 15 regulatory regime for UWB operations. Moreover, there is little or no practical experience with UWB communications systems that would be mass marketed to businesses and consumers -- such products are simply not in existence, nor have their operating standards been defined with enough specificity for the Commission to fully evaluate their impact on existing communications services. Thus, at a minimum, the Commission should wait and consider fully the results of the technical studies currently planned by NTIA before taking further action in this proceeding. In addition, NAB strongly urges the Commission to conduct its own tests to ensure that UWB devices do not adversely impact other communication services.

I. THE COMMISSION MUST NOT PERMIT OPERATION OF UWB RADIO ON AN UNLICENSED BASIS UNTIL IT IS CERTAIN THAT HARMFUL INTERFERENCE WILL NOT OCCUR.

Both the *NOI* and *Notice* asked for comments on the standards and operating requirements that should be applied to UWB systems to prevent interference to other radio services. *NOI* at ¶ 9; *Notice* at ¶ 34. NAB is encouraged by the Commission's pledge to "provide ample opportunity to complete these tests and ensure that analyses of the test results are submitted in the record for public comment before adopting any final

rules in this proceeding." *Notice* at ¶ 1. However, NAB cautions that until both the individual and cumulative effects of UWB emissions are thoroughly tested, the Commission should not alter the Part 15 emission limits for the restricted bands and broadcast bands. There is simply not yet enough detailed technical information in the record of this proceeding -- nor is there any practical experience with multiple low power UWB devices -- to understand the impact of UWB technology on the licensed radio services. The Commission has raised a number of questions in this proceeding which can only be answered through thorough testing. Below we specifically address some of these questions.

A. The Proposed 2 GHz Floor.

The Commission "believe[s] that UWB devices can generally operate in the region of the spectrum above approximately 2 GHz without causing harmful interference to other radio services." *Notice* at ¶ 27. Generally, NAB supports this concept. However, should the Commission decide against implementing the proposed 2 GHz floor, the Commission should ensure, through comprehensive testing, that UWB devices do not create harmful interference to existing communications services operating at or below 2 GHz.

Further, there are critical communication systems operating above 2 GHz and, without adequate testing, the Commission cannot presume that UWB technology will not cause harmful interference to those services. For example, broadcasters operate their Electronic News Gathering (ENG) in the 1.990 to 2.110 GHz band. Although ENG, employing both high power and a directional antenna, is generally less susceptible to interference, the cumulative effects of various types of UWB technology on ENG is unknown. Thus, should harmful interference occur to the ENG frequencies, it may

become necessary to restrict the operation of UWB devices above the proposed 2 GHz threshold.

B. The National Telecommunications and Information Administration (NTIA) Testing Program May Provide Anecdotal, But Not Comprehensive, Analysis of UWB.

On September 7, 2000, NTIA hosted an open meeting to discuss operational scenarios for examining UWB's potential interference to GPS receivers. Although NTIA is working hard to meet the Commission's October 30, 2000 deadline[4], NTIA is still in the process of defining which operational scenarios are both appropriate and feasible to test. NTIA has asked for formal industry suggestions no later than its next scheduled meeting of September 27, 2000, and based on this timing it seem unlikely that NTIA will complete its test program by the Commission's October deadline. As the following example demonstrates, until the UWB applications become better defined, it may be very difficult to predict whether UWB will interfere with GPS or operations on other restricted bands.

One of the operational scenarios that NTIA proposes to test is an aircraft, descending into an airport, that is using GPS for its Category I precision landing approach. The types of UWB devices in close proximity to the runway could be numerous, ranging from aircraft communication, to runway incursion sensors, to luggage or personnel tags, etc.[5] If the runway is located near a highway, business or residential

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[4] *Notice* at ¶ 41.

[5] In addition, other UWB devices could include ground personnel communications, ramp or perimeter security systems, video surveillance links, ground radar surveillance, positioning and tracking systems and aircraft radar altimeter ground proximity warning systems. These examples were submitted to NTIA at the September 7, 2000 meeting by MultiSpectral Solutions, Inc.

district, UWB devices such as handheld wireless data links, wireless LAN networks, or automotive collision and/or navigation devices could all potentially interfere with a GPS precision landing approach. If the proliferation of UWB devices occurs as envisioned, it quickly becomes difficult to measure the potential interference to the restricted bands such as GPS, or the broadcast bands. For example, how will NTIA define operational standards for UWB devices? How many different combinations of potential UWB devices should be included in the study? What criteria will the NTIA identify in evaluating the cumulative effects of UWB devices on GPS systems? How will NTIA predict the quantity and type of UWB devices that could affect specific GPS systems?

Thus, NTIA has the difficult task of (1) identifying possible operational scenarios, (2) choosing which scenario or scenarios are feasible given the Commission's October deadline, (3) choosing among the several potential UWB applications whose standards are yet to be defined and (4) evaluating whether those UWB technology will adversely impact GPS systems. Given the above, it is yet to be determined how much value the NTIA study will yield. Further studies by either the Commission or NTIA may be needed to fully explore the effects of UWB technology on GPS systems.

C. The Commission Must Also Fully Examine The Effects Of UWB On Non-GPS Systems.

While one NTIA study proposes to examine the effects of UWB technology on GPS, NTIA has also proposed to study the susceptibility of non-GPS systems[6]. However, this second study will only focus on Government and military communication systems. It is vital that the Commission conduct tests on the impact that UWB systems will have on

[6] *See A Master Plan for Developing Measurement Methods, Characterizing the Signals and Estimating Their Effects on Existing Systems.*

private sector, non-GPS systems. The licensed radio services that could be adversely affected by UWB interference span the entire telecommunications industry, from radio and television broadcasters, to cellular, wireless and paging services.

NAB agrees with the Commission that it is "vitally important that critical safety systems operating in the restricted frequency bands, including GPS operations, are protected against interference." *Notice* at ¶ 24. Although the safety of aircraft and military operations can be critically dependent on GPS, NAB reminds the Commission that television and radio broadcasters also provide the public with important safety services. Broadcasters, through their news departments, weather departments and the Emergency Alert System (EAS), provide the public with potentially live-saving information during emergencies, including hurricanes, tornadoes, hazardous or toxic waste spills, evacuations, etc. The Commission should ensure that any deployment of UWB technology, be it with or without the proposed 2 GHz floor, does not cause interference to either the newsgathering or the broadcast transmission of such emergency information.

In addition, there are several other licensed radio services such as Digital TV, Digital Audio Broadcasting (DAB), and various wireless Internet and other telecommunications service that the Commission has recently authorized and that are now being rolled out in the market place, or which the Commission has under active consideration. These new services will be used by both businesses and consumers in their homes. The Commission can only assure that these services will not be disrupted by thoroughly testing the impact that UWB technology will have on these new services.

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http://www.ntia.doc.gov/osmhome/uwbtestplan. At this point it is unclear whether NTIA plans to submit the results of this second study by the Commission's October deadline.

Accordingly, NAB urges the Commission to wait for the results of NTIA's study and to embark on its own laboratory test program.

II. THE COMMISSION SHOULD NOT TAILOR PART 15 TO ACCOMMODATE UWB TECHNOLOGY -- RATHER IT SHOULD USE PART 15 TO ENSURE NON-INTERFERENCE.

Part 15 of the Commission's rules permits the operation of low power radio frequency devices without a license from the Commission or the need for frequency coordination. *See Notice* at ¶ 2. Part 15's technical standards are also designed to ensure that there is a low probability that the operation of such devices will cause harmful interference to other users of the spectrum. Should harmful interference occur, the operator is required to immediately correct the interference problem, even if correction of the problem requires ceasing operation of the system causing interference. Further, unlicensed Part 15 devises must accept whatever interference they receive from other users of the spectrum. 47 C.F.R. § 15.5.

The Commission concluded that the current Part 15 rules pose two obstacles to the implementation of UWB technology. *NOI* at ¶ 5. First, because of their wide bandwidth, the operation of UWB devices can result in transmission of their fundamental emissions into restricted frequency bands or in other TV broadcast frequency bands. Second, the current emission measurement procedures of Part 15 may be incompatible with future UWB technology. To overcome these two obstacles, the Commission states it has "tentatively conclude[d] that the Commission's rules should be amended to provide for UWB devices." *Notice* at ¶ 7.

NAB does not believe that the Commission should make special accommodations in Part 15 for UWB systems. Rather, the Commission should require any product that employs UWB technology and that is intended to be mass marketed to businesses and

consumers to comply with current Part 15 regulations. These regulations are designed to ensure protection by limiting the amount of power that unlicensed devises can radiate in the restricted and TV broadcast bands. Relaxing these limits to make special provisions for UWB systems removes the interference safeguards and practically guarantees that there will be interference. Indeed, because of the uncertainty with regard to the potential for UWB devices to cause interference, NAB supports the Commission's proposal to require UWB emissions below 2 GHz to be attenuated 12 dB below the general Part 15 emission limits for the restricted and broadcast bands. *Notice* at ¶ 35.

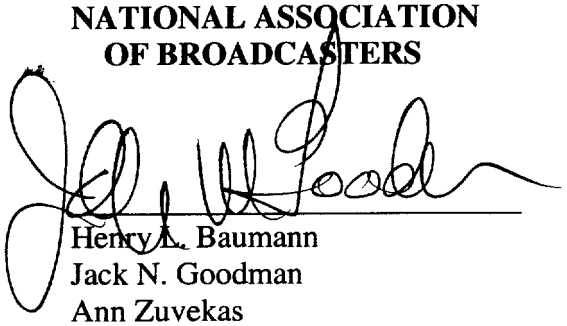
NAB agrees with the Commission that Part 15 authorization of UWB technology should be limited to low power devices only (*Notice* at ¶ 18) and we urge the Commission to require UWB system manufacturers to demonstrate that their products meet the Part 15 regulations through the Commission's Type Certification Process. Any UWB device that cannot be shown to meet Part 15 regulations should be considered high power and thus should, as the Commission has recognized (*Notice* at ¶ 19), be required to be licensed on an experimental basis until such time as the Commission has sufficient experience to craft rules specifically for UWB technology.

IV. CONCLUSION

For the above-mentioned reasons, NAB urges the Commission to refrain from amending its Part 15 rules until technical standards and operating requirements can be established that will ensure that UWB technology will not result in harmful interference within restricted bands and television broadcast bands.

Respectfully submitted,

NATIONAL ASSOCIATION OF BROADCASTERS



Henry L. Baumann
Jack N. Goodman
Ann Zuvekas

Kelly Williams
Science & Technology

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